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## **PART I**

# **Financial Research and the Problems of the Day**

It is the aspect of economic life called Finance that has commanded increasing attention in recent seasons. Sharp and widespread rises in interest levels, continued substantial additions to private debt and the debt of state and local governments, slight increases in the money supply coupled with larger increases in the frequency of its turnover, differences in rates of expansion among various financial institutions — the significance of these and other financial and monetary developments during the past year or two has preoccupied citizens concerned with the efficient operation of the economy.

Questions are being raised about the rules and regulations that govern our financial organization, and about its administration. The adequacy of this organization and of its management for satisfactory growth and stability of the economy at large as well as of its several parts has become a public issue of central importance. Not since 1908, when the panic of the preceding year led to the organization of the National Monetary Commission and eventually to the establishment of the Federal Reserve System, and the 1930's, when the deep depression bred a host of hurried revisions in our banking and financial machinery, has there been such a tide of demand for a comprehensive review of our financial and monetary organization and for recipes to improve it. The President's request of last month for Congressional authorization of a commission "to conduct a broad national inquiry into the nature, performance and adequacy of our financial system" may be the first step towards meeting this demand.

Unlike the earlier waves, the present swell of interest in money and finance has not been generated by a serious panic or disastrous depression. Individuals and groups here and there feel their opportunities and aims to be unnecessarily or unfairly restricted by financial limitations, and these pressures have added

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This report was presented at the annual meeting of the Board of Directors of the National Bureau, held in New York City, February 25, 1957. I am indebted to my colleagues for helpful suggestions on Part One, and to Geoffrey H. Moore for taking charge of the preparation of Parts Two and Three.

to the current emphasis on the problems of finance. But not very many are in real trouble. The calendar year 1956 ended with the economy as a whole in prosperous condition.

It is, of course, the wish to avoid trouble that is largely responsible for the present wave of interest. The expansion in national production that succeeded the mild contraction of 1953-54 slackened noticeably in 1956; and this leads some to ask whether financial restrictions have not contributed to the retardation and, if continued, may not generate an actual decline in production and along with it an increase in unemployment. On the other hand, the interest rate and price rises of 1956 suggest to others, equally thoughtful, a present or imminent danger of inflation which must be countered with a strong will and tight rein. In either case, the present situation is almost unique in the appearance, before a storm, of a wide demand for an inspection of our financial organization to ensure its shipshape condition.

A significant aid in directing this prudent interest is the gradual improvement in our ability to sense the current state of the economy and in our knowledge of how the economy operates — a development to which the earlier episodes and their consequences contributed. We are more sensitive than in former days to the dangers before us. We are better informed about the need for and possibilities of action to avoid them. We are also more conscious of our collective responsibility to strengthen the economy and are anxious to discharge it. Our progress had made us more clearly aware of important areas of ignorance and of the need to explore them before they turn into trouble spots.

In these circumstances, the annual review of the National Bureau's economic research may appropriately concentrate on those sections devoted to finance. How has our work in this area contributed to the information with which any national commission must begin its labors? How has our work indicated gaps in knowledge and the lines of investigation that need to be pursued? What, in our experience, is it reasonable to expect from the labors of such a commission?

## I

To many people, finance is a mysterious process that obscures, if it does not also distort, the "real" processes of economic production and distribution. This ignorance is less reprehensible than some economists might care to admit. Finance and its relation to the flow of goods and services that is the final goal of economic activity are complex and not thoroughly understood by any of us. One aim of a group charged with the conduct of a public inquiry into the financial system might therefore be to outline the basic structure of the system for the enlightenment of the general public.

As all economists know, the lesson would be most instructive if finance were to be viewed in the context of economic life as a whole.

A broad view of the economy, with the advantages of perspective, proportion, and emphasis on interrelationships that it provides, has been a major objective of the National Bureau's research from the very beginning. Our work on national income and its composition, then on money flows, and most recently on the national balance sheet has yielded three sets of figures that should prove useful in tracing the outlines of our economic system and identifying the place that finance occupies in it. The three sets of accounts are in part overlapping, as somewhat different views of the same structure must be; by the same token, they are also complementary. Two provide information on "flows"; the other on "stocks."

A few words on each set of accounts should serve to indicate the kind of information it contains. I begin with the most familiar: the national income accounts of the Department of Commerce, which represent an outgrowth of Kuznets' work on national income, commodity flow, and capital formation, and the work that preceded it. Of the three sets of accounts, these are the oldest in terms of current availability. They have been published on a regular basis for some twenty years, at first annually and then more frequently. It is now common knowledge that the national income accounts, together with related data provided by the Securities and Exchange Commission,

provide an integrated set of facts not only on the rate of production and income but also on the rate of investment in tangible property and the rate of savings with which they are paid for; and not only on the aggregates but also on their major components. Shortly after the new year began, the President could report to the nation that in 1956 the gross national product of the United States had reached the new high level of 412 billion dollars; that 266 billion of this total consisted of consumption goods and services purchased by families — an average of almost 1,600 dollars for every man, woman, and child in the population; that governmental services and investments made up another 80 billion; and that the balance of 67 billion went for private investment in business plant, equipment, and inventories, in residential buildings, and in a net increase in claims on foreign countries. All who listened learned also that this private investment was financed by personal savings of 21 billion, corporate savings of 7 billion, charges for depreciation and other types of capital consumption of 34 billion, and a government surplus on current account of 4 billion.

These figures are remarkable because of the extraordinary levels of national well-being to which they point. They are remarkable also as a technical achievement in statistical reporting. With surprising promptness and within a margin of error for many purposes tolerable, the national income accounts report on the production, income, investment, and savings of many millions of families and millions of business enterprises, and the current accounts of thousands of governmental units. It is information highly relevant to a view of the financial process. The figures tell us the volume of goods and services for which money payments must be made and therefore something of the work done by the monetary and banking system.<sup>1</sup> The figures tell us the volume of investment made by business enterprises and home buyers and therefore something of the work done by the financial system to channel savings to them.

Valuable as they are, the national income accounts of the Department of Commerce do

not give us all the information we would like to have on key items in the financial process. Net investment in governmental capital goods and in consumers' equipment, for example, and the corresponding items of savings — undoubtedly very large items — are lacking. For them we must turn to the rough estimates by Kuznets and Goldsmith, not available on a current basis. In principle, these could be incorporated in the Department of Commerce's national income accounts, and at a recent meeting of the Conference on Research in Income and Wealth there were suggestions to that effect. But many other financial items are beyond the scope of the national income accounts because these accounts aim primarily at estimates of production, income, investment, and savings that are free of duplication or are gross only by the amount of capital consumption. Families, corporations, and governmental units invest not only in new tangible capital goods and additions to inventories but also in second-hand tangible capital goods; and not only in tangible assets but also in new and seasoned financial assets of all sorts. They obtain funds for investment not only from savings of their own, and not only directly from other savers, but also indirectly, through financial intermediaries of various types. Further, besides final consumption and capital goods, unfinished products enter the market in very large volume, are purchased and sooner or later paid for. These various transactions involve money payments and the services of financial institutions, and alter the financial positions of the economic units of the country. For the whole financial picture we need additional figures.

Some of the needed figures are provided by the new set of accounts on the flow of funds developed by Copeland at the National Bureau with the close cooperation of the Board of Governors of the Federal Reserve System

<sup>1</sup> The aggregate includes also goods and services that are consumed by their producers and therefore require no money payments. Food produced and consumed by farmers and the rental value of owner-occupied dwellings are examples. However, they are not large in relation to the total and in any case are separable.

and currently compiled by the Board. Like the national income accounts, the flow of funds accounts consist of aggregates of statements for all the economic units of the economy, obtained directly or indirectly; and like the former, they require and organize a great deal of information. The statements in this case relate to monetary dealings of various sorts, classified in a number of ways, and shown separately for each major sector of the economy.

In the flow of funds accounts a major distinction is made between financial and non-financial flows. The nonfinancial flows cover all kinds of goods and services purchased, including raw materials and semifinished commodities, finished products, labor, old as well as new capital goods, and investment returns, insurance payments, and taxes. Inclusion of the vast volume of payments for these swelled the total of nonfinancial payments to 1,390 billion dollars in 1955, the latest year for which the figures are available. This is a sum three and a half times the value of the gross national product of 1955.

The financial flows during a given period have to be estimated simply by taking net changes between beginning and end of the period in each of the major classes of financial assets and liabilities of each sector.<sup>2</sup> In 1955, their aggregate amounted to about 60 billion. Of course, far more than 60 billion was used in financial transactions in 1955. Debits to checking accounts amounted to 2,800 billion, and we may guess — no information is available — that payments with currency added another 400 billion. Total payments therefore reached a figure of something like 3,200 billion — a sum that excludes a fairly substantial volume of nonbank clearings of daily balances in such transactions as those on the stock exchange. The difference between the total of 3,200 billion and the estimate for nonfinancial transactions of 1,390 includes the 60 billion reflected in net changes in financial assets, and many billions involved in portfolio shifts and repayments of debt and such “purely technical” transactions as transfers between bank accounts or agents of the same economic unit. The flow of funds total of 1,450 billion —

the flow through the “main money circuit,” in Copeland’s terminology — therefore accounted for less than half of total payments in the form of currency and checks. We know little about the omitted items. They have a place in the picture, for they reflect transactions that are part and parcel of the process of production in an economic system organized like ours. We may watch with interest Goldsmith’s efforts to get at some indications of the volume and character of “gross” financial flows. That something can be learned from study of the gross flows is indicated by Hickman’s analysis of issues and extinguishments of bonds, the information Grebler and his co-workers put together on the flows of funds through the mortgage market, and currently published information on extensions and repayments of consumer instalment credit.

Though it would be valuable information, no cross-classification of sectors is yet possible in the flow of funds accounts, except for a few sectors and types of flows. But anyone going to these accounts would find a comprehensive and integrated picture of the main money transactions of the economy. Here, in one set of tables, are the “sources and uses” of funds, classified in a uniform manner, for each major sector of the economy. The magnitude of each item appears in a framework that provides the perspective of the whole.

As is their nature, the flow of funds accounts, like the national income accounts, relate to transactions during a period of time or — in the case of financial flows — to net changes between the beginning and end of the period. Thus they do not state the positions of the various economic units in the economy at any moment in time. They tell us nothing about the wealth of the several groups of units, or the relation between wealth and debt outstanding. For such information we must turn to the third set of accounts.<sup>3</sup>

<sup>2</sup> There are one or two exceptions to this method of estimation.

<sup>3</sup> Shortly before this report went to press, the Board of Governors published certain of the financial assets and liabilities used by it in calculating financial flows; see the *Federal Reserve Bulletin*, April 1957.

The national balance sheets list tangible assets and financial assets, liabilities, and the difference between assets and liabilities — net worth or equity. Certain assets are omitted, important though they are — inventories of nondurable goods in the hand of consumers, military and naval equipment held by the government, such intangible items as business goodwill and patent rights, the earning power of specially trained or gifted persons, and personal earning power in general. The difficulties of placing a value on them are obvious. Even with these excluded there are difficulties enough. Few families, and not all governmental units and unincorporated businesses keep adequate nonfinancial or even financial records or make them public. And hardly any of the balance sheets report the values of the several assets and liabilities on a common price base. With ingenuity and daring, however, and with much labor, the gaps have been filled, the diverse “book” values converted to common current prices, and the statements combined into sector totals and then into a balance sheet for all the nation’s economic units together.

This set of balance sheets was estimated by Goldsmith for 1949 and a number of earlier years in the remarkable study he did before joining us, and is being revised and compiled by him for more recent years in our study of the postwar capital markets. As one can see by glancing at his preliminary statement for 1955,<sup>4</sup> the balance sheet contains a summary statement of the entire wealth of the country and the intricate chain of financial relations through which it is held. It too has the advantage of being both comprehensive and quantitative. Every major class of wealth, every major type of financial assets — each of which is also a major type of liability or claim to ownership — every major sector of the economy, is put in relation to the others.

Let me circle a few of the figures. At the end of 1955 the national wealth of the United States amounted to about 1,340 billion dollars at prices then prevailing, a figure whose size we can appreciate only if we remember that the nation’s total income in 1955 amounted to

325 billion and that the year’s total net addition to wealth equaled about 45 billion, inclusive of investment in nonmilitary government property and in household equipment. This wealth was the property of the American people, severally or collectively. But only about half of it was held directly by persons or unincorporated enterprises. The other half was held indirectly, through corporations and governmental units. And because financial intermediaries of various sorts — banks, insurance companies, pension funds, and the like — were also involved, the chain of ownership ran through several links. Further, individuals were often debtors of corporations, and the governmental units — the people collectively — were debtors of the people individually, and these and other interrelations compounded the number of connections. Indeed, the analogy of a chain fails us; it is better to think of a web or network of claims.

Specific examples of interconnections are provided by the share of financial intermediaries in the total of various claims outstanding. In 1955, according to Goldsmith’s more detailed calculations, these intermediaries held 40 per cent of short-term loans, 78 per cent of mortgages, 63 per cent of federal government obligations, 54 per cent of state and local government bonds, 78 per cent of corporate and foreign bonds, and 7 per cent of corporate stock.<sup>5</sup> Including claims heaped on claims and equities on equities the total assets of 1955 reached over 3,000 billion dollars, more than double the national wealth. This ratio conveys some sense of the magnitude of financial interrelationships in the economy.

If we ponder these interrelationships we can begin to understand their economic function. The involved web of debt and ownership provided by our financial and business organization enables individuals to own portions of diverse and farflung enterprises. It does still more. It enables individuals to choose among

<sup>4</sup> Page 34 below.

<sup>5</sup> Personal trust funds are included with households in the 1955 balance sheet. If they were to be treated as a financial intermediary, all the percentages would be raised.

a variety of claims in investing their savings and holding their liquid funds — claims of diverse risk, character, and purpose. It enables businessmen to choose among a variety of ways to meet their financial needs. Our business and financial organization links, and in effect converts, one type of claim to another, and combines claims with services like banking and insurance — and thus meets the variety of tastes and objectives that motivate individuals. It also sets up a system of competing and complementary claims and relationships that permit and encourage shifts in holdings and types of issues in response to changes or expected changes in relative prices and rates of return, and in absolute prices too — shifts that play a part in the process of economic change. And it does so within a framework of laws, administrative rulings, customs, and contractual obligations that often limit, and sometimes constrict, the freedom of response to these changes or expected changes.

The information on stocks and flows is thus the beginning — and only the beginning — of knowledge of the financial side of our economic structure. The three sets of accounts together provide a view to be studied and kept in mind before moving closer to an examination of particular portions or processes of the economy. For it is a view of our economic organization, and the place of finance in it, that provides the perspective necessary for dealing with particular problems — problems which as a practical matter must be dealt with singly but which in truth cannot ever be treated entirely in isolation from one another in an economy made up of interdependent parts.

As we become better acquainted with these comprehensive bodies of information, we may expect to learn more about their analytical uses, and acquire greater skill in applying them to the interpretation of current developments. We may expect, also, that their accuracy will be improved and that they will be kept more closely up to date.<sup>6</sup> But it is already fair to say that we have a better grasp of the current dimensions and proportions of our economy — and some sense of the magnitudes is essential — than we did twenty or even ten years ago,

and far better than the National Monetary Commission did when it was struggling with its task of improving the country's banking system.

## II

As we are all aware, today's financial structure is not quite the structure of a year ago. Nor is it the structure of 1946, when the problems of reconversion rather than of boom were being debated. Still less is it the structure of the deep depression of the 1930's, or of the years before World War I and the Federal Reserve System. It is a structure subject to incessant change.

The proportions among stocks and flows of different types and among industrial sectors and financial agencies of different kinds — the proportions that delineate the financial structure — are being continually modified. They change as the financial machinery changes, and as the economy which it serves changes. Close observation of the changes in financial structure, analysis of them into cyclical, secular, and other components so far as is possible, and careful determination of the underlying factors, are essential steps towards penetration of their significance. Properly to assess the present adequacy of our financial machinery requires determining the extent to which changes in the nature and needs of the economy have forced obsolescence on, or uncovered deficiencies in, existing financial and monetary rules and regulations. This, in turn, requires historical perspective.

In our work at the National Bureau we have been interested not only in the contemporary organization and operation of the economy but also in its long-term trend. For both purposes we have found it necessary to inquire into the economic history of the United States. Among the fruits of that inquiry is an array of

<sup>6</sup> The national income accounts are published currently and frequently. The flow of funds accounts, however, have not been made public for 1956, and they have been calculated only on an annual basis — though efforts by the Board of Governors and by the National Bureau to place them on a quarterly basis are under way. The balance sheets wait upon the occasions when private resources and energies can be spared to assemble them.

basic facts about economic changes — or, when this was the significant fact, about the absence of change. Anyone who seeks to determine the extent to which our financial system is obsolete will need to review the main historical facts gathered here and elsewhere on the financial system — and also on the economy generally and on the role of government particularly.

Useful information on certain major financial flows, extending back into the nineteenth century, are found in Kuznets' reports on national income and the diversion of income into investment. His revised and extended estimates, prepared for use in the capstone volume of the capital formation and financing project, point to significant changes over time, as well as to significant elements of stability. They tell us that domestic savings were proceeding at a somewhat higher level relative to national income in the earlier days than in recent years. Before World War I the fraction of income saved averaged about one-eighth over good years and bad, while in the decade just ended it has averaged under a tenth. Inclusion of Goldsmith's estimates of savings embodied in consumers' durable equipment — savings in governmental real assets are already included by Kuznets — would take out the slight downward tilt in the trend and turn it horizontal. It would also raise the whole level significantly, perhaps to about a seventh of national income. Gross investment (that is, capital formation before deduction of depreciation and similar charges), has of course been substantially higher than net investment or savings. The difference has been growing, for a larger and larger fraction of gross capital formation has come to be financed by capital consumption charges.

These various measures of savings and investment in relation to national income or product are not merely alternative estimates based on somewhat arbitrary differences in concept. The differences among them point at significant changes in the character of savings and investment and also at changes in the financial machinery involved. It is of some importance that the share of gross capital formation financed by capital consumption charges

— a source of funds quite different from sources external to the business enterprise — was under one-half before 1914 and in recent years has been running close to three-quarters.

Kuznets and his co-workers in the capital formation and financing project have also been gathering detailed information on the investment in different industries and have been examining what information there is on methods and sources of financing by each of the major industries. But long-term changes in financial structure can be viewed as a whole only in the balance sheets estimated by Goldsmith.

If we extend our view a fair distance to get the trend — say, back to 1912 — we see, among other developments, enormous increases in the figures included in the national balance sheets. Total national assets at the end of 1955 were ten times what they had been in 1912. Partly this was the result of increases in real national wealth; partly, of increases in price levels; partly, also, of increases in financial interrelations. Excluding the difficult item of land and adjusting the rest for price changes as well as he can, Goldsmith reports real national wealth at the end of 1955 to have been two and a half times what it was in 1912. It is noteworthy that between the end of World War II and the end of 1955 our real national wealth grew by about 300 billion dollars, measured net of depreciation and expressed in prices of 1946-47. Investment during 1956 added more billions and by the beginning of the present year the postwar accumulation had probably reached close to 350 billions in 1947-49 prices — over 450 billions in present prices. This is an amount equal to almost one-half the nation's entire reproducible tangible wealth as it stood at the end of the war, and not much less than the whole of it in existence a few years before the first world war. Some earlier decades have seen even bigger percentage increases in wealth, but never in any other decade of our history, or of any country's, has such an absolute accumulation taken place. In India, to set a sharp contrast, strong efforts are being made to achieve something like 12 billion dollars of additions to wealth over the next five years.



The primary contribution of the national balance sheet is in revealing, through the changing proportions among its different sections, changes in financial structure. I have hinted that financial assets grew more rapidly than tangible assets. The ratio of financial or intangible to tangible assets was 0.84 in 1912. In 1929 it was 1.30, in 1949, 1.29 and in 1955, again 1.28. The rise between 1912 and 1929 and the high level in recent decades reflect a complex of many changes — in financial organization, in commodity price levels, in corporate stock prices, and in the national debt, among others. These developments have affected also the relative importance of financial intermediaries. Such institutions changed their share of national assets from 13 per cent in 1912 to 18 in 1955; and of financial assets, from 27 to 32 per cent. Goldsmith has been experimenting with various ways of splitting up this complex of changes into components amenable to economic analysis. It is an essential step in the difficult task of getting at the significance and causes of these historical changes in the structure of the national balance sheets.

Within the group of financial intermediaries considerable differences in rates of growth are observable. This information is set forth in full detail in Goldsmith's forthcoming report on *Financial Intermediaries in the American Economy since 1900*.<sup>7</sup> The banking system, for example — commercial banks, mutual savings banks, the postal system, and the Federal Reserve banks — accounted for 65 per cent of the assets of all financial intermediaries in 1912. In 1955 they held only 45 per cent. On the other hand, the insurance system — private life, property, and accident and health insurance, and public and private pension systems, including social security — held 14 per cent of all the assets of financial intermediaries in 1912 and 28 per cent in 1955.

The governmental financial institutions, of which very few were in existence in 1912, may be pulled out to form a group by themselves. Taken as a whole these governmental financial agencies — which today include the Federal Reserve, postal savings, public pension funds,

social security, and governmental lending agencies — accounted for less than 1 per cent of the aggregate assets of all financial intermediaries combined in 1912. In 1955 the percentage was 24; excluding the Federal Reserve, it was 16.

Equally striking are the changes in the percentages of various types of securities and mortgages held by financial intermediaries as a group. The percentages for 1955 have already been given. In every case the corresponding percentages were smaller in 1912. Especially sharp was the rise in their share of corporate and foreign bond holdings, from 35 per cent of the total in 1912 to 78 per cent in 1955.

The comparison of national balance sheets, which I have been illustrating, sets forth changes in the financial structure as a whole. Developments in particular parts of the structure have also drawn attention, and I should mention a few items which have occupied us during the past year or on which completed reports are soon to appear.

The rise of federal financial agencies is an especially interesting development. A substantial part of the detailed story will appear in the report by Saulnier, Halcrow, and Jacoby on *Federal Lending and Loan Insurance*.<sup>8</sup> This careful review covers not only actual lending operations of the sixty-eight federal agencies involved — of which over a third are still active today — but, as the title of the work indicates, also loan guarantee and insurance operations. Governmental guarantee and insurance of loans create contingent liabilities not noted in the national balance sheets, but which have had far-reaching effects on the nature and operations of our financial structure and markets. For each of the agencies covered, a collection of basic statistics is presented on direct and insured or guaranteed loans: they reached a cumulative gross total of almost 140

<sup>7</sup> Some summary results were released in his Occasional Paper of two years ago. Part of the data are being extended and examined in the light of current conditions in the postwar capital markets project.

<sup>8</sup> The major items excluded from the scope of the study are Federal Reserve rediscounts and bank deposit and savings and loan share insurance.

billion dollars between 1917 and 1953 — the period covered by the report. The authors show how the credit programs developed and where they stood when the study ended; describe the services they offered; and record the experience of the federal government as a lender. The report does not stop with a recital of the facts. The authors went on to study the impact of the various credit activities on private finance and on the economy at large. One interesting observation, which offers much food for thought, is on the lack of central coordination of the large variety of programs, at least during the period covered, and — deliberately or otherwise — pursuit of the special purposes of separate programs without regard to over-all economic stability.

A rapidly growing item on the liability side of the household balance sheet, and on the asset side of the balance sheets of business and financial companies, is consumer instalment credit. This form of credit rose from under a billion in 1912 to 3.2 billion in 1929 to 12 billion in 1949 to 29 billion in 1955 — far more rapidly between each pair of years than total debt. Roughly parallel and even greater increases occurred in the value of consumer durables held by households. The rises in consumer debt attracted a great deal of attention early last year and led the Council of Economic Advisers to request the Board of Governors of the Federal Reserve System to study the need for stand-by consumer credit regulation. Among other steps, the Board of Governors decided to garner the knowledge and canvass the opinions of academic economists specially competent in the matter. The National Bureau, whose Financial Research Program had published a dozen reports on statistical, institutional, and theoretical aspects of consumer instalment credit, was asked to undertake this part of the job. Under Moore's leadership we assembled a group of economists largely from universities to present and discuss papers on various aspects of the problem. The proceedings of the conference are being published by the Board of Governors in the set of documents it is attaching to its report, and we are listing them simultaneously

in our series of conference volumes. Through the cooperation of several finance companies new statistical materials were gathered. These, analyzed by Moore, Atkinson, and Klein in a paper presented at the conference, throw new light on changes in consumer credit terms in recent years. The availability of such information may lead us to expand the study begun last year on the quality of credit so as to include consumer as well as business credit.

The money supply is another item in the balance sheet on which we are currently working. Over the long term the money supply has risen more steeply than total financial assets and still more than total tangible assets. It also rose more rapidly than volume of transactions or national product. Money supply is, of course, a crucial item in the financial picture and we have been interested for many years in estimating its magnitude as closely as possible in order to provide a solid basis for an analysis of its relation to price movements and the physical volume of activity. In 1947 we published Schwartz and Oliver's monthly estimates of currency held by the public, banks, and treasury in the period 1917 through 1944, and Mrs. Schwartz has since, with Friedman's collaboration, extended these back from 1917 and forward to date, supplementing them with estimates of bank deposits for the same period. An analysis of the secular and cyclical behavior of the money supply is approaching completion, which promises interesting results. As Friedman states below,<sup>9</sup> the rise in money in relation to national product, that is, the decline in the income velocity of money, seems to reflect largely the rise in per capita real income. One might say that the increase in money supply was used partly to deal with — or cause — an increase in prices; partly to handle the larger physical volume of output; partly to improve liquidity. In reporting on Cagan's study of the factors determining the supply of money, Friedman notes the striking fact that the bank reserve ratio is now at the level of the 1880's, a result of a long decline followed by a marked increase during the

<sup>9</sup> Pages 41 to 43.

last twenty-five years. Important changes in the structure of the banking system, in reserve requirements, and in the relation among interest rates on different kinds of claims are reflected in these changes in the reserve ratio.

Corporate bonds constitute the subject of still another investigation that is reaching completion. A few years ago we published Hickman's first book on *The Volume of Corporate Bond Financing since 1900*; the second, on *Corporate Bond Quality and Investor Experience*, has been approved by the Board and is in press; and the final volume, a statistical supplement to the other two, is in the last stages of preparation. The study began when corporate bonds seemed to have become of minor importance. But bonds turned out to be the dominant source of external long-term financing by corporations during the postwar period, and with its completion the study presents a unique collection of carefully organized information on this form of security. It is based on what is virtually a census of all bonds of private domestic corporations issued to the domestic investing public between 1900 and 1944; and for each issue it sets forth, with appropriate industrial, size, and other characteristics, such pertinent facts as issues, extinguishments, and outstandings. Here, for the first time, mutually consistent estimates of debt and money flows are given for the corporate bond market. Defaults, default settlements, and other aspects of investor experience are analyzed. Among the interesting findings are those bearing on the deterioration of quality of bonds issued as the boom of the 1920's gained momentum, the changing relation between bond and stock financing during the course of a business cycle, and investor experience with different grades of bonds.

Hickman's analysis of investor experience points to an institutional factor important in the capital markets. All things taken into account — differences between high- and low-grade issues with respect to promised yield, default losses experienced, and capital gains realized — the "life-span" yields realized on high-grade bonds were below those on low-grade bonds. Investors in the aggregate, there-

fore, obtained better returns on the low grades. Hickman discusses the possibility that his findings may be explained by the fact (already referred to) that the dominant holder of corporate bonds is the financial intermediary. Such institutions are "closely regulated as to type and quantity of securities that may be purchased and their investment officers . . . would be embarrassed if their portfolios contained a large volume of defaulted obligations, even though no loss should ultimately result." As a rule, therefore, institutional investors are highly conservative and place a premium on quality. So also the small investors, unable to diversify adequately, seek to avoid ruinous default losses through the purchase of high-grade bonds — this is another and complementary explanation of the findings. The implications of these and other results of the study for public and private policy are considerable. We may recall that the study has already been put to use in discussions that led to the revision of state regulations of investment by financial intermediaries.<sup>10</sup>

The last item in the balance sheet to which time permits reference at this point of our report is pensions. I have already alluded to them in describing the rise in the "insurance" sector of the financial intermediary group and in the government group. As we all know, the pension systems of the United States, both public and private, have been growing by leaps and bounds in recent decades. Goldsmith's balance sheets show virtually nothing in pension and retirement funds in 1912. Today the assets of such funds are something over 70 billion dollars. Approximately a third of current personal savings as ordinarily measured is represented by additions to public and pri-

<sup>10</sup> The value of the collection of bond statistics would be greatly enhanced if it could be brought to date and kept on a current basis. This is a task especially appropriate for a public agency. The census of bonds with which Hickman worked was in fact largely assembled with the assistance of a Work Projects Administration project sponsored by the Federal Deposit Insurance Corporation and directed by the National Bureau with the active cooperation of several public agencies and private investment services. It is to be hoped that one of the federal agencies concerned with financial matters will soon take on the responsibility.

vate pension reserves. It is a development largely since the passage of the Social Security Act in the case of public pensions, and since the war, in the case of private pensions. This rapid growth has raised a variety of questions concerning the possible effects of further growth in the pension structure not only on the well-being of the aged, at which objective they are primarily aimed, but also on other significant matters: on the rate and character of savings, on the operations of the capital markets, on the distribution of income, and on the size and efficiency of the labor force. During 1956 Holland, with the help of Bloom and Webbink, and the advice of an expert committee, spent most of his time exploring the state of knowledge in the area and developing possible lines of research. His report is in press.<sup>11</sup> We believe that it points to some pressing needs for information and offers some useful suggestions on the directions research might fruitfully take.

One cannot fairly set forth the major historical developments in our financial structure without including also the level and structure of interest rates and related rates of return on different types of assets. We have not neglected this essential aspect of finance. Macaulay's book on *Interest Rates, Bond Yields and Stock Prices in the United States since 1856* has become a classic in its field. It helped clarify the meaning of the difficult concepts with which it deals, subjected to trenchant analysis such hypotheses as those relating interest rates to commodity prices, and provided a valuable collection of statistics. All who seek perspective on present rates of interest, and on the historical relation between trends in interest rates and the vast growth of capital, technological advance, and the other developments with which capital growth and economic progress are so closely intertwined, refer to Macaulay's series on long-term bond yields.

Durand's estimates of basic yields of bonds also have been widely used to provide historical perspective on present-day relations among yields on securities of varying term to maturity — a brief paper describing his recent estimates may be expected soon; in the report on *Urban Mortgage Lending by Life Insurance Com-*

*panies*, Saulnier developed new estimates of gross and net yields on mortgages, which are being kept current by the Life Insurance Association of America; Behrens presented a complement to these in his *Commercial Bank Activities in Urban Mortgage Financing*, as did Edwards in an unpublished report on mortgages held by savings and loan associations; and Grebler, Blank, and Winnick pieced together these and other available series on mortgage rates in their recent volume, the first main product of the capital formation and financing project.

Information on interest rates, however, is still hard to come by. We know little in a systematic way about interest rates on new bond issues as distinct from seasoned, on securities privately placed as distinct from those offered publicly, on over-the-counter securities as distinct from those traded on the exchanges, and about realized yields as distinct from those promised, to mention a few gaps. Current statistics provide not much more information on the structure of interest rates and security prices than did the wholesale prices of a few raw materials and semi-processed products on the structure of commodity prices fifty years ago. For these and other reasons differences among interest rates are difficult to interpret. Because interest rates are expressed as percentages, they are too frequently treated as comparable. But securities and debts are of highly diverse character. They differ in quality, size of issue, duration to maturity, liability to income tax, and other significant respects. These differences in characteristics cause substantial differences in behavior. The structure of interest rates, like the financial structure described by balance sheets and money flows, is constantly shifting. Macaulay considered the relation between short- and long-term bond yields and the presumption that the latter reflect forecasts of the former — poor forecasts, they seemed to be; Hickman and Durand added to the discussion of these and other differences in yields by bringing in institutional factors of the sort mentioned earlier; in his

<sup>11</sup> Published April 1957.

study of the market for state and local government securities, Robinson is exploring these and other causes of the relative rise of yields on tax-exempt bonds during the postwar decade; and in our business cycle studies we have devoted attention to systematic differences in the cyclical behavior of bond and stock prices and yields. The time is becoming ripe for a broad study of the structure of interest rates and yields, the institutional factors that characterize different capital markets, and their relations to shifts of funds from one use to another. One objective of the current post-war capital markets project is to prepare the way for this ambitious venture.

### III

Surely the outstanding developments in finance in our generation reflect change in government's role and policies.

The financial world of today would be an astonishing spectacle to those who proposed the Aldrich Plan of 1912 and to the Congress that finally passed the Federal Reserve Act of 1913. A Board of Governors in control of the Federal Reserve System and with wide powers to operate it; federal bonds of 220 billions in the hands of the public, an asset not offset in private balance sheets by a corresponding liability; deposit insurance and insurance of shares in savings and loan associations; mortgage insurance or guarantee and a government agency charged with the responsibility and power to support the prices of mortgages; a variety of direct federal lending programs; regulation of security issues, of securities markets, and of loans on securities; a public pension system of large and growing dimensions; a tax level, structure, and code that materially influence the direction of investment and the means by which it is financed — these are among the developments of the past few decades. Though not all their effects are yet clear, it is certain that they have greatly influenced the financial machinery, the economy which utilizes it, and the structure of assets, liabilities, and financial interrelations that reflect this use.

The developments on the side of government overshadow changes in financial struc-

ture generated by the economy itself. But the latter, though not easily disentangled from changes associated with government's role in our economic life, can hardly have been negligible. They deserve attention.

At the time the National Monetary Commission had completed its studies and deliberations and its recommendations were being debated in Congress, the nation's real income per capita was one-half the present-day level, according to Kuznets' estimates. One may surmise from his and other recent work that real income was less evenly distributed among the people. The nation's real wealth in relation to population was also substantially below what it is today, according to Goldsmith's new estimates; how it was distributed we can only guess from the information on income.

Here is one basic fact about the economy generally which provides an essential part of the background for appraising and interpreting developments in money and finance. Changes in the average level of income and wealth and in its distribution among the people influence the kinds and quantities of goods and services people are willing to buy and pay for — or undertake commitments to pay. They also influence the kinds and quantities of assets people choose to hold, a subject on which Atkinson reported last year.

Another basic fact relates to the gradual change in the industrial organization of production. Industries typically differ in the kinds and quantities of facilities they use in production, in their location, in the size of establishment and size and form of organization of enterprise, and in the hazards to which they are exposed. For these reasons they differ also in their financial practices and policies and the sources to which they are in the habit of turning for their funds. Changes in the relative importance of the various industries therefore also affect financial structure. These changes have been large. Before World War I a bigger fraction of our workers, and of plant and equipment, was employed in agriculture than is the case today — indeed, the highwater mark in agricultural employment came at about that time; manufacturing greatly differed in its in-

ternal structure, and in the aggregate was smaller in relation to the rest of the economy; the railroads were adding to their resources on a scale far exceeding that of later years; the utilities were a fraction of their present size; and this was true also of the service industries, including government.

While industries typically differ in the respects mentioned, now as decades ago, they have not remained static either in their financial requirements or in their financial practices, even apart from influences exerted by changes in financial organization itself. The years have brought alterations in productive methods. Such alterations are a major cause and consequence of changes in income levels and the accumulation of wealth, as well as in the relative importance of different industries. One widespread example is the change in capital in relation to output. Consider, for example, the implications for capital requirements of the long-term fall in real capital (including or excluding land) per unit of output on farms; a downward trend among the public utilities also; and in manufacturing, a rise until about World War I and then decline. From such developments, also, have come changes in the financial needs of individual industries and of industry as a whole.

These and related matters have been explored and analyzed in some detail in our studies of trends in income, in production and employment, and in capital formation and financing. Among recent and soon to be expected reports on these investigations are Barger's volume of 1955 on trade; Stigler's of 1956 on the service industries generally; Tostlebe's on agriculture, now in press; Ulmer's on the railroads and utilities, in its last stages of preparation; the manuscript being prepared by Creamer, Dobrovolsky, and Bornstein on mining and manufacturing; and Kendrick's discussion of trends in production, productivity, and capital and labor input in a variety of industries, a preview of which appeared in his recent Occasional Paper. These studies provide information essential to the interpretation of financial developments. Kuznets is building their results, and the results of

other studies, into a comprehensive review of factors affecting secular changes in capital formation, determinants of the supply of savings, changing sources and types of finance, and their interrelations. His report, we may expect, will be a landmark in the scientific study of economic growth, capital formation, and finance. It will provide, as well, the basis needed for sensible discussion of future prospects, and in particular of the possibility of capital shortage — or surplus — which disturbs some persons.

Our studies of trends in production and related factors also shed light on the general process by which a progressive economy generates new products and industries that compete with the old. In this way, too, the studies help to explain developments in finance. The divergence found in the trends of the separate industries of the economy is determined, Burns pointed out in his *Production Trends*, by the very same causes that determine the increase in general production. In part, at least, the same interpretation may properly be placed on the divergence Goldsmith so clearly shows has characterized financial institutions. Only the examples would be changed and of course more emphasis would have to be placed on government regulation.

Everyone is aware of government's role in determining the rules and regulations that mold our financial machinery. It is not so obvious that investment and finance have been influenced in many ways also by the growth of government to its present size. One important effect appears in the influence of the tax system on the structure of finance and the character of savings. The progressive nature of the income tax; the omission from the personal income tax base of the rental value of owner-occupied dwellings and of employer contributions to pension funds; the difference in the treatment of dividends on stock as compared with the treatment of interest on bonds in calculating corporate income subject to tax; the depletion, depreciation and capital gains provisions; the virtual exemption of life insurance companies and similar financial institutions from income taxation — these undoubtedly in-

fluence the relative advantages of different types of income and assets and perhaps also the size of income and assets. We have looked into some of these questions in the study of the tax on capital gains by Seltzer, and of tax-exempt securities by Lent. A continuing investigation is that of the personal income tax by Seltzer, Kahn, and Holland. Our postwar capital markets study must give due attention to this large factor, for it surely sets a distinctive mark on the present period.

A pioneering effort to connect broad changes in the economy and in governmental activity and policy with changes in a specific form of finance yielded the report of some years ago by Jacoby and Saulnier on *Business Finance and Banking*.<sup>12</sup>

They observed that around 1900 the major earning assets of American banks were business loans — which made up about half of all such assets — and that forty years later the commercial loan had declined in relative importance to the point where it accounted for only 15 per cent of bank earning assets. They sought an explanation of this trend, and found it in large part in changes in the character of the economy and of business financial needs. Industries most dependent on short-term bank credit, largely agriculture, declined in relative importance. So also did the small and medium-sized firms, in manufacturing and trade, which rely on bank credit more heavily than the largest firms. Further, external financing declined in relation to internal financing, as Kuznets' figures show to be the case for the economy at large.

Of course, the trends were not uniform between 1900 and 1940, and the situation has altered significantly since 1940. The section of our postwar capital markets study under Shapiro's direction will cover business financing in the recent period and compare it with the trend discussed by Jacoby and Saulnier. Apparently the declining trend in short-term commercial loans evident before the war has not been entirely offset since 1940. Although banks have been selling off government bonds and expanding business loans, such loans currently account for no more than 25 per cent of

bank earning assets, as compared with 45 per cent in 1900.

Equally interesting is the indication of flexibility on the part of the banks in adapting themselves as well as they could to changing conditions, particularly in the areas served and the types of instruments and terms utilized. The movement into consumer credit is an example. As the report notes, the freedom to adapt to new circumstances was eventually widened by the removal or modification of some of the impediments associated with the regulation of bank investments and the practices of bank examiners.

The postwar period offers yet another striking development where our studies bear on the financial problems of the day — namely, the large volume of investment in urban housing and the large share that its financing has taken of the community's savings. Expenditures on new housing construction have averaged over 10 billion dollars per year since 1945, and housing starts, over 1 million dwelling units per year. Mortgage debt outstanding increased from 31 billion at the end of 1945 to 135 at the close of last year, an average increase of 9 billion per year — figures which reflect in-

<sup>12</sup> The report was the capstone study of the business financing project. It drew on two main sets of studies, and it is well to mention these, to indicate the large amount of detailed work that went into it, work which is finding additional uses in current studies. The first set of studies was concerned with the contemporary financial structure of business and its changes since 1900. It included Koch's report on the finances of large corporations, Merwin's volume on the finances of small manufacturing corporations, Lutz's monograph on the cash balances of manufacturing and trading corporations, Chudson's view of the pattern of corporate financial structure in 1937, and two unpublished manuscripts — Kaysen's on industrial and commercial debt, and Alexander's on changes in business financial structure over the broad sweep of the decades between 1900 and World War II. The second set of studies included four published reports by Saulnier and Jacoby on specific types of financing — term lending, accounts receivable financing, equipment financing by commercial and industrial firms, and the financing of inventories through field warehouse receipts; and two unpublished memoranda, one by Merwin and Schmidt and the other by Roosa and Urquhart on Federal Reserve industrial loan experience — a subject followed up in the Saulnier-Halcrow-Jacoby volume on federal credit programs.

creases in mortgages on old as well as new houses.

These investments and savings have been far greater in recent years than during the war and the depression of the 1930's, and greater also than during earlier building booms. Though few realize the enormity of such fluctuations and the length of their period, it is common knowledge that housing is a highly variable item of investment. The current and prospective situation with respect to housing and mortgages is one of the major questions of the day.

The report on *Capital Formation in Residential Real Estate* by Grebler, Blank, and Winnick, released during the year, is the latest publication resulting from a broad group of studies that bear on that question.

We have long been interested in housing and housing finance. Capital in the form of housing was shown by Kuznets to be an important as well as highly fluctuating component of total investment in his studies of commodity flow and capital formation; and Wickens, exploiting the wealth of data accumulated in the CWA Financial Survey of Urban Housing as well as the experience he had gained directing that survey, put together an extensive collection of information on the economic position of residential real estate before the war. Of course, our business cycle staff had been devoting much attention to fluctuations in this and other forms of investment and finance. Then in 1945 the Financial Research Program undertook a full scale investigation of urban mortgage financing. Out of its work came six volumes of studies.<sup>13</sup> This project was accompanied by the Program's studies in agricultural finance.<sup>14</sup> Soon after, we began the study of federal lending and loan insurance of which a substantial section deals with government participation in the housing market and its financing. There followed the capital formation and financing project, which includes the Grebler-Blank-Winnick volume and other publications.<sup>15</sup> Most recently, we have added to our program the postwar capital markets project, which is devoting a share of its resources to a study of the mortgage market.

Grebler, Blank, and Winnick bring together a great deal of the information gathered in many of these studies, as well as additional information, and relate it to developments in the economy at large and in government in particular. As Kuznets points out in his foreword to their book, some of the findings may serve to correct widely held impressions. Despite a continuous rise in national income and improved governmental and private facilities for financing home construction, the rate of growth of residential construction has slowed significantly. A decline in real capital investment per new dwelling, the authors show, is involved. Of major interest is the connection of the long-term trends in residential construction and in the sources of its financing with factors that closely reflect "the entire growth pattern of our country: the demographic patterns that determine the magnitude of the population increase and the additions of new dwelling units; the adaptation of the population to changing economic and other opportunities which takes the form of internal migration, whether from the country to the city, from the city to the suburbs, or from one region to another; the complex of technological changes which provide new opportunities,

<sup>13</sup> These are Saulnier's on urban mortgage lending by life insurance companies and Behrens' on commercial banks, to which reference has already been made; a history of the remarkable experience of the Home Owners' Loan Corporation by Harriss; a general review of the characteristics of urban real estate markets by Fisher; Colean's summary of the impact of government on real estate financing in the United States; and a final volume by Morton, recently off the press, on comparative markets and experience.

<sup>14</sup> Saulnier's Occasional Paper on costs and returns on farm mortgage lending by life insurance companies was one product, the volume by Jones and Durand on mortgage lending experience in agriculture another. Horton's report on *Patterns of Farm Financial Structure* will soon appear [released in April 1957].

<sup>15</sup> These are a technical paper by Blank, based on a large scale tabulation of historical building permit data by the WPA, providing new estimates on the volume of residential construction between 1889 and 1950; the volume on capital formation and financing in agriculture by Tostlebe, which covers farm housing; and Goldsmith's report on financial intermediaries, which includes the story of housing finance from another point of view.



either in more effective production processes or in new products, and which affect housing either through changes in housing technology or through encouragement of competing demands for nonhousing products; the change in consumer tastes — partly the effect of changing technology and partly the effect of a general rise in the standard of living and unequal long-term elasticity of demand for various goods. All these and many others are drawn into the analysis.”<sup>18</sup>

A striking financial development in this area of investment is the decline in the fraction of new housing financed by equity funds — from 53 per cent before World War I to only 27 per cent in recent years. In the financing of mortgages drastic changes have occurred in the role of government; and, already mentioned, a rise in the percentage of mortgages held by institutional lenders, particularly commercial banks, life insurance companies and savings and loan associations. Further, and especially because of the participation of government, the terms under which mortgages are made have been greatly altered: amortization provisions have increased in relative importance, the contract term has lengthened materially, interest rates have declined, and so has the equity-value ratio. These are changes that have helped to support the high level of home building in recent years — how much, the authors are careful to point out, is difficult to say.

The effect of government's entrance into the housing and mortgage market, and the flexibility of response of the financial system to the opportunities before it, are analyzed further through Klamman's current work on the mortgage market. His results are set forth in an Occasional Paper on the mortgage company, soon to be submitted to the Board for approval. After the introduction of FHA mortgage insurance in 1934 and the VA mortgage guarantee program ten years later, mortgage companies changed radically the character of their operations. The FHA and VA developments — offering insurance or guarantee, on certain conditions — speeded up, if they did not originate, standardization of mortgage contracts and uniformity of and improvement in

property and borrower appraisal techniques. In effect, mortgages on homes have become standardized and therefore more readily negotiable financial instruments, and in this way geographic barriers to mortgage investment by financial institutions, and along with them long-enduring regional differences in interest rates on mortgages, have been reduced. A national mortgage market developed in which large institutional investors wishing to avoid the expense and trouble of branch offices or subsidiaries could utilize the services of local mortgage companies in originating and servicing mortgage loans. As a result, the number of mortgage companies doubled between 1945 and 1955, and their assets rose from less than 200 million to 1.8 billion dollars — a rate of growth exceeding that of any other financial institution active in mortgage markets.

The development of the mortgage company also facilitated the expansion of short-term commercial bank credit in mortgage operations, for mortgage companies require substantial sums, which they obtain largely from commercial banks, to close mortgages and carry them in inventory. At the end of 1955, notes payable to banks equaled 1.2 billion, and mortgage companies were the major channel through which short-term commercial bank funds flowed into the mortgage market. A related development, as mortgage money became tight, was the adoption on a wide scale of new commitment techniques — commitments extending over periods up to two years — involving broadened use of the type of interim commercial bank financing called “warehousing.” This has apparently introduced substantial lags of response to changes in capital market conditions, which has interesting implications.

If home building and the financing that accompanies it should enter the declining phase of the long swing to which they have been subject in the past, mortgage companies will shrink in size and assets — unless they again change the character of their operations. Whether or not the enormous fluctuations of the past will continue is a moot question, how-

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<sup>18</sup> Page x.

ever. As Kuznets emphasized in his introduction to the Grebler-Blank-Winnick volume, it is an important question that suggests a useful piece of research — research that might profitably extend to the records of other countries, for they also appear to have experienced long swings in residential construction. The work on Canadian investment being done by Buckley, a Research Associate this year, should provide information needed when such a comparative study is undertaken.

Developments outside of finance influence finance. The reverse is also true. Presumably, it is true in lesser degree, for finance is only one of the factors influencing general economic development. Yet finance as a factor affecting saving and capital formation and thus economic growth may not be neglected, and the range of questions involved was put up for discussion at a conference held by the Universities-National Bureau Committee. The proceedings, entitled *Capital Formation and Economic Growth*, were published early last year. Abramovitz, who edited the volume, suggestively expresses the function of finance in economic growth as that of simultaneously reducing to business the real costs — including risks — of financing its investments, and of increasing to savers the real rate of return — again taking account of risks — from their capital. The work by Kuznets on trends in capital formation and financing may be expected to advance our understanding of these complex matters. Friedman's study of the "consumption-savings function," soon to come off the press, bids fair to be a signal contribution to one important aspect.

We have given some attention also to the relation between financial and monetary factors and what appear to be long swings in the rate of general economic growth — swings which, though probably connected with long-term absolute fluctuations in building construction, are to be distinguished from them. Burns had something to say about this relation in *Production Trends*, where he suggested that changes in money supply and the price trends generated by them might be a significant cause of long swings in production growth. So did

he and Mitchell in their brief exploration of differences in the length of business cycles during periods of secularly rising and falling prices. As *Measuring Business Cycles* reported, they found a hint that cycles, and particularly contractions, were somewhat shorter when price trends were up. Friedman in his study of money supply is continuing some of this analysis; and Abramovitz, who is making a special study of long-term changes in the American economy, expects to focus on financial factors generally.

The relation between price trends, income distribution, capital formation, and economic growth has long interested economists and historians. The question is of more than theoretical interest to underdeveloped countries committed to policies of rapid growth, and to developed countries committed to policies of "full" employment. Our studies suggest that careful analysis of the historical facts in a variety of countries might help to raise discussion of the question above its present largely speculative level.

#### IV

Stabilization policy must rest on as wide a tested knowledge of economic behavior as possible. For in a free economy national aims are attained not by harnessing men but by harnessing the forces that move men to their own ends. Recognition of this basic principle supports the efforts of economists to broaden understanding of the fundamental features of the economy, to show how they account for the economy's tendency to fluctuate, and to discover how these tendencies can be controlled, without undue damage to other national objectives.

There is a natural propensity to extrapolate recent history — to assume, on the basis of the postwar experience, that the business cycle is no longer a serious problem. Some reach the same conclusion by reasoning from the striking changes in the role of government in the economy, a few of which I have listed. If the country has attained so definite and so large a measure of success in dealing with the problem of instability, those concerned with

the improvement of our financial system might concentrate their attention on its relation to other objectives. And we at the National Bureau might well ask whether we should not turn from the study of business cycles to other problems.

Study of our economic history over a longer span than the past decade raises some doubts about the confidence with which such a conclusion may be held. Certain results of our business cycle studies bear on this question, and even a brief review of our work on money and finance must make room for a word about it, for our studies of business cycles include a significant part of that work.

My first example is from *Measuring Business Cycles*, the title of which may have led some hasty readers to dismiss it as a technical exercise in measurement, but which in fact suggested important substantive conclusions. One was the high degree of stability of the cyclical behavior, after irregularities were smoothed out, of most single activities and of business as a whole, despite secular, structural, and other changes in the economy up to World War II. "It hardly seems possible," Burns and Mitchell stated, "that the widespread secular changes that have taken place in economic organization — such as the increasing scale of business enterprise, the spread of absentee ownership, the building up of colonial empires, the disappearance of our frontier, the commercialization of agriculture, the declining rate of population growth, the development of instalment selling, the increasing role of government in economic affairs, and many others — have not left their mark on business cycles." Yet their studies "yielded little evidence that secular, structural, or cyclical changes have impressed their influence strongly on the cyclical behavior of single activities or business as a whole." "A great deal of evidence exists that random factors constantly influence business activities," but only "now and then," they reported, do "we find secular, or discontinuous, or cyclical changes in the cyclical behavior of single series."<sup>17</sup>

The extent to which passage of the Federal Reserve Act altered the cyclical behavior of

various monetary and banking series provides a specific example from the field of money and finance. Mitchell compared the behavior of the banking system under the National Banking and Federal Reserve Systems. There were some differences. Reserve ratios of national banks, for example, fell by something like 10 per cent on the average during the ten expansions in general business between 1879 and 1914. In contrast, the average decline in the reserve ratios of Federal Reserve member banks during the four expansions between 1919 and 1933 was little more than 2 or 3 per cent. There were roughly corresponding differences during contractions in general business, reserve ratios rising much less in the later period. Also, the Federal Reserve System steadied all open market interest rates, as Mitchell observed. "But the contrast between open-market and customers' rates remains striking in 1919-38." The Federal Reserve System virtually eliminated the sharp seasonal swings in money rates characteristic of the National Banking period, but in other respects "did not alter radically the relations between banks and their customers"; and there were other features of banking that continued little changed — at least over the interwar period.<sup>18</sup>

Another example of stability, despite change in the banking system, is noted in Friedman's report on the study of money supply. It covers the period through 1954. Friedman finds a close and highly consistent relation between the behavior of the stock of money, particularly its rate of change, and the state of general business. Typically, the rate of change in money supply turns down long before business as a whole declines, and rises long before business as a whole rises. This was true under the National Banking System, it was true during the interwar period, and it has so far been true since World War II.

Hickman's study of the cyclical behavior of bonds provides a different example. A section of his analysis touches on the relative proportion of financing done through stock and bond

<sup>17</sup> *Measuring Business Cycles*, pp. 413, 480.

<sup>18</sup> Quotations and figures cited are from *What Happens During Business Cycles*, pp. 46, 169, 170.

issues. The proportion, Hickman found, followed a fairly typical cyclical pattern over the four decades to World War II — something that Mitchell's earlier studies had already suggested. As bond prices fell in relation to stock prices in the second half of an expansion, external financing shifted from bonds to stocks. In the postwar period, Hickman pointed out, this relation seems to have been altered by a variety of factors. Some are temporary — like the decrease in the burden of past debt financing resulting from the war and postwar rises in price levels — and some may last longer, like the high level of corporate taxes, which favors debt financing. During the past year there have been signs that the pattern of behavior characteristic of earlier decades is reasserting itself — with a modification. The shift from bonds to stocks, it seems (the facts are not yet entirely clear), is taking the form of a rising proportion of convertible bonds among new issues of securities.

Our business cycle researches point also to a continuing problem encountered in applying monetary or other administrative action to halt or prevent the excesses of a boom. This is the problem of obtaining public acceptance of such action. The diffusion indexes prepared by Burns, Moore, Hultgren, and others of our staff indicate that within the aggregates of production, employment, prices, and profits, crosscurrents multiply before the top is reached in general business. As long as the aggregates themselves continue to rise, the percentage of industries or firms with rises ordinarily remains above 50 per cent. But this percentage reaches its peak and begins to fall well before business as a whole does — usually even before the declines in financial markets and investment plans that foreshadow general recession. Very likely — though perhaps not as soon — a similar development occurs in the percentage of families with rising incomes. Differences of opinion are bound to arise in such a mixed situation, a situation in which signs of both inflation and deflation can be found.

I could cite other examples, but it is unnecessary to press the point. In any case, the observations that could be gathered together

would not be conclusive. It is proper to say only that some of our work raises questions concerning the extent to which improvements in our banking system and other changes — financial and otherwise — have radically altered the tendency of the economy to generate cyclical fluctuations. The questions take diverse forms. Have the improvements been of minor importance — since the war as well as before? Or have they been largely offset by other significant changes in economic organization, such as the rise of financial institutions not under the direct control of banking authorities? However put, the questions invite study, as the wide-ranging discussion in *Policies to Combat Depressions*, published last year, clearly indicated.

Whether future cycles will include cycles as severe as the worst of past days — this is a rather different question. Some of the changes that have taken place do seem to make a vital difference in this respect. It is unlikely, for example, that the United States will again see a banking panic like that of the 1930's or of 1907. And it seems unlikely, also, that any cyclical decline that might be generated by the economy would, after a point, be left to run its course uncontrolled. Before production and employment have fallen very far, we may expect, government will intervene with various of the means at its disposal. If the amplitude of fluctuation of business cycles of the future does in fact turn out to differ from those of prewar days, it will mark a crucial change in the economy. But even this is not entirely certain.

How different the postwar economy is from the economy of earlier days, we should recognize, is an open question. Our experience with the "new economy" has been short, and still largely remains to be analyzed. The analysis would be most useful if it were carried out as part of a broad review of differences generally among business cycles. The postwar period may be different from some earlier periods, but it might bear a family resemblance to others. If the analytical comparison of business cycles which we have considered a desirable addition to our research program could

be undertaken, we might advance our understanding not only of the postwar economy but also of the devastating episode of the 1930's, and come closer to removing the causes of that kind of disaster. Our studies of credit quality in booms and depressions and our other work in business cycles would find extensive uses in a comparative analysis of business cycles. So also would the studies of long cycles. The availability of these and other pieces of research strengthen the probability of a fruitful outcome.

Even if, as some assert, the business cycle is no longer a problem or a serious problem — which is by no means certain or even very likely — it has given way to other problems, of which inflation is not the least. The study of business cycles would still be worth pursuing, for it might teach us much concerning the economic behavior with which national policy must continue to deal.

## V

The problem of improving the means that will effectively and at reasonable cost ensure stability, encourage growth, and hold open the doors of opportunity to each of the groups and individuals in our population — this problem of policy is focused today largely on financial organization and management.

The National Bureau does not make recommendations on policy. At any given moment, policy must be based not only on known facts about the nature and operation of the economy, but also on guesses and conjectures and on a balance of the diverse values and objectives that move men. We have taken our province to be the establishment of significant facts and relationships that deserve to be used in the search for effective national policy. We try to strengthen the basis on which men of diverse opinions and attitudes may meet to discuss and decide national questions. Each of us at the National Bureau also has his opinions about the "facts" that still lie outside the domain of scientific knowledge; each of us also has his values. But in our studies we try to keep these to ourselves. One reason is that they are as diverse as those of the public at

large. We believe also that the surest way to keep our findings free of bias is to stop short of policy pronouncements.

Yet everything we do is ultimately aimed at policy.

Some of the studies I have described have already made contributions to the improvement of policy and to its better administration. The others mentioned, we may reasonably expect, will sooner or later find similar uses. And this is our hope also for those portions of our current work which, though they touch directly or indirectly on financial and monetary matters, I have not been able to discuss.<sup>19</sup>

It is obvious that few of our studies provide ready-made answers to the specific questions that are troubling people today. But it is the objective of all our studies to provide information vital in answering these questions. Surely we can better deal with them if we know the quantitative dimensions of the financial organization; if we can glimpse some of the factors that have accounted for its long-term changes; if we have a notion of its role and the role of other factors in cyclical fluctuations — a notion that at least is not inconsistent with the available facts; if we can recognize clues to the current course of economic events and interpret them in full awareness of their limitations.

Without the knowledge that painstaking and time-consuming work at the National Bureau and other centers of research has built up — work, I should add, that could not have been undertaken except with the unselfish support of the great foundations, business associations, and hundreds of individual corporations, trade unions, and individuals — without this work of

<sup>19</sup> These are the study of the world structure of trade and payments, in which Woolley with Dwyer, Karreman, Lichtenberg, and Michael are providing a basic set of figures that may prove helpful in dealing with some of the problems of international finance; Copeland's study of governmental financial requirements, a section of the capital formation and financing project that has reached a staff committee for review; Gort's study of capital financing in petroleum and steel, which is focused on individual firms; Nelson's study, which suggests that the number of mergers is related to the state of the capital markets; and Stigler's new study of capital mobility.

years, no national commission charged with the responsibility to inquire into the adequacy of our financial system and report in a relatively brief period of time, would be as well prepared to carry its burden. And at least as much should be said for the basic statistical work that has gone on for many years in the federal government and in various business agencies.

My recital might give the impression that the range and intensity of basic research on financial questions have been satisfactory. That would be too complacent. When one considers the gravity and complexity of the financial and other economic problems that confront the world, and recognizes the gaps and uncertainties in our knowledge, the scale and intensity of economic research appear to fall short of an appropriate level.

Twenty years have elapsed since the Exploratory Committee on Financial Research set forth its comprehensive and farseeing program. Under Young's direction, and then Saulnier's, and with the advice of a distinguished Committee on Research in Finance, much solid work has been done on the questions raised, work from which we have benefited and can benefit today. But as one looks back, it is clear that only a portion of the program has been carried out. Partly it is because of the complexity of the problems, our own limitations, and the uncertainties that must surround research in these circumstances. To a degree these are out of our control. But there are other reasons.

Scientific work in many fields of finance may fairly be said to be in its infancy also because scholars have been handicapped by lack of information. Not until after World War I did annual information become available, in the tabulations of the Treasury Department, on essential economic magnitudes like corporate profits, undistributed earnings, and charges for depreciation — and even then, with a considerable lag and rather unstable industrial classifications; not until the middle twenties did the Department compile and publish annual balance sheets of corporations; not until the Securities and Exchange Commission was es-

tablished in the thirties did an extensive collection of income accounts, balance sheets, and surplus accounts for individual listed corporations become available; not until the Securities and Exchange Commission and the Federal Trade Commission began their compilations in 1947 did quarterly reports for a sample of small as well as large corporations become currently available. Even today we know very little of the finances of unincorporated business enterprises, a serious gap in the information needed for national income estimates as well as for the study of financial changes. And there are other gaps in the data on volume of financial transactions, distribution of holdings, quality characteristics of loans and investments, and interest rates and costs of servicing investments. It is true that much systematic information has been wrung from the aggregates and averages published for a long time in the financial journals, incomplete as some are. Mitchell's analysis gives some of the major elements of a sketch of the role of finance in business cycles. But it is only a beginning.

Further progress hinges not only on the provision of more information. It requires also more systematic analysis than existing information has yet been subjected to. In much financial research we are still in the stage of historical description. Time-series analysis, cross-sectional analysis, and reconciliation of the two is essential to expose what elements of order run through the welter of financial changes. And as has already been mentioned, we could use the advantages that international comparisons provide.<sup>20</sup>

Surely, also, the likelihood of progress in research is greater when resources are adequate to attract and hold the men needed, to provide them with the facilities required, and to disseminate their findings. In research there can be no guarantee that demand will bring forth results; yet demand will bring forth

<sup>20</sup> A useful review of the state of research in one section of finance was provided a few years ago by the Conference on Research in Business Finance, held under the auspices of the Universities-National Bureau Committee for Economic Research.

the effort that is a necessary condition for results. Though resources for research have become available on a scale greater than might have been expected a generation ago, they still fall short of requirements.

Any additional basic research we and others may embark upon will not reach fruition, if it be successful, except after much time and energy has been consumed. In the meantime, any commission set up must work largely with what it finds at hand or can sweep together quickly. With the concentrated public attention that would be its major strength, and with adequate funds and proper staff, a national commission could take a significant step toward filling gaps in our basic information. It could also make a beginning in their analysis. And there are, undoubtedly, many details of our present financial regulations that require revision and in which improvements will readily suggest themselves. But the wider and more difficult questions, those related to the basic problems of stability and growth, will be answered with less than full knowledge and

with less than satisfying certainty of the results.

The suggestions that may emerge for improving our financial machinery will therefore have to be viewed as proposals for experiments. "Seen in historical perspective," these will appear, in Mitchell's words, "as the current stage in that long and gradual process by which men are learning to keep money, the good servant, from becoming at times a bad master."<sup>21</sup> Reasonable men will not expect more. Few of us would settle for less.

The results of the "experiments" undertaken will need to be analyzed — and so also will the new problems that time will bring — if the way is to be paved for the commission that will follow the one currently proposed. The National Bureau may expect to devote attention to financial research for a long time to come.

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<sup>21</sup> *Business Cycles: The Problem and Its Setting*, p. 136 n.